UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

DIESEL GENERATOR SUBJECTED TO TORNADO WIND GENERATED LOADINGS

SEP TOPICS III-2, ITEM 4.3.7 AND III-A, ITEM 4.6.1

GPU NUCLEAR CORPORATION AND JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION:

In our Safety Evaluation dated February 26, 1990, concerning the above subject, the staff concluded that the walls of the diesel generator vaults and the oil tank compartment are capable of withstanding the loads generated by a tornado having a windspeed of 168 miles per hour and were acceptable. However, the staff required that GPU Nuclear Corporation (GPUN) provide adequate protection to the outside fuel supply line against the potential missile strike irrespective of the probability consideration. Another reliable method of assuring that fuel will be supplied to diesel generators in the event of a supply line break could also be acceptable.

By letters dated April 16, 1990 and July 27, 1990, GPU Nuclear Corporation (GPUN/licensee) provided a commitment to install a safety grade check valve and a safety grade gate valve in the supply line inside the emergency diesel generator fuel tank room. The installation of these two valves is intended to provide protection of the fuel oil supply from back flowing out of the 15,000 gallon Diesel Generator Fuel Storage Tank (Day Tank) in the event of a fuel supply line rupture outside of the fuel storage tank room. These changes are intended to satisfy the requirements of 10 CFR Part 50, Appendix A Criterion 2, for the protection against natural phenomena.

2.0 EVALUATION:

In the previous Safety Evaluation dated February 26, 1990, the staff had concluded that the oil tank compartment is capable of withstanding the loads generated by tornados. However, the staff requested that the licensee provide adequate protection of the outside diesel fuel supply line against tornado generated missiles. The safety concern is the possibility that the unprotected portion of the fuel supply line, located between the 75,000 gallon fuel oil tank and the wall of the diesel generator fuel storage tank room, may be ruptured by

a tornado generated missile resulting in fuel oil flow from the Day Tank through the pipe break. To assure that a supply line rupture will not deplete the fuel oil supply within the Day Tank, GPUN has proposed to install a safety grade check valve and a safety grade gate valve in the fuel supply line. The gate and check valves will be located in the fuel storage tank compartment which is located on the south east side of the plant next to the emergency diesel generator compartments. These compartments are completely detached from the reactor and turbine building and do not share ventilation systems. Therefore, conditions in the tank compartment during a post LOCA event are expected to be mild.

The gate valve is manually operated and controlled locally. It will be normally closed and opened only during fuel transfer operations. During any fuel transfer operation, an operator is stationed at the tank to control the operation and terminate the transfer if an emergency should take place.

3.0 CONCLUSION:

Based on the above, the staff concludes that the proposed design change to install a safety grade check valve and safety grade gate valve in the diesel supply line establishes an acceptable method of assuring that fuel will be supplied to the diesel generators in the event of a supply line break outside the diesel generator building. This modification satisfies the criteria stated in 10 CFR Part 50, Appendix A, General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena" and Regulatory Guide 1.117, "Tornado Design Classification."

The staff's acceptance of this proposed design is predicated upon its finalization and implementation. If the licensee alters the design (e.g., valve number, type, or location) during finalization and implementation, the licensee is required to submit the amended design for staff review and approval.

Principal Contributor:

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DATED: